9-1

Independent Assurance:

Comparative Sample Processing

Objectives

Review the workflow of IA-Comparative samples

About Independent Assurance

Authorized Users

Staff members who will have the ability to create, verify and update Independent Assurance correlation records are:

- IA Inspectors
- Concrete Technicians / Section Material Specialists
- IA Section Supervisors

The staff members who will have the ability to complete Independent Assurance correlation records are:

- IA Section Supervisors

The staff members who will have the ability to view Independent Assurance correlation records are:

- All staff

Module Overview

The Independent Assurance (IA) module of HiCAMS provides automation for much of the comparative testing process, and allows the IA Section staff to perform daily verification tasks via the HiCAMS application on their desktop computers. This functionality includes, but is not limited to:

- Automatic linking of IA sample test results with QA and Project sample test results
- Automatic calculation of ratings and points
- Notifications to appropriate staff when correlation records are ready for verification
- Notifications to appropriate staff if correlations are completed with Fair or Poor ratings
- Annual and quarterly summary reports of all non-comparative IA tests
- Provides a method for determining the number of tests that may be required on each project.

Independent Assurance Overview

Independent Assurance (IA) is a federally mandated program requiring that the state verify the accuracy of its testing procedures and equipment for a certain group of materials. Some IA testing is comparative – that is, the results of the IA test are compared to Quality Assurance (QA) or Acceptance test results. Other IA testing is non-comparative, and is used to monitor procedures and equipment, along with verifying the acceptability of material.

The purpose of comparative testing is to verify the accuracy of QA and Acceptance tests, and to generally monitor the performance of the personnel performing those tests. To this end, IA tests are compared to QA and Acceptance tests. This comparison is called an ***IA Correlation***.

A correlation record determines whether or not the QA or Acceptance test results vary from the IA test results by more than the acceptable limits of deviation. Each test result is then ranked as excellent, good, fair, or poor. The responsible IA Inspector (or Section Concrete Technician for concrete materials) is required to investigate any fair or poor ratings, document his findings, and then verify the correlation record.

After the IA Inspector verifies a correlation, the IA Section Supervisor will review it. He may review any investigation documentation or ask for more investigation of fair or poor ratings. He is then responsible for completing the IA correlation.

Verifying each correlation record consists of nothing more than reviewing the correlation information for accuracy and setting the correlation status to "Verified." Completing the correlation is an almost identical process performed by the IA Section

Supervisor in which the correlation status is set to "Complete."

Comparative Sample Workflow

This section will provide a brief overview of the sampling and automated linking process for those correlation types involving IA Comparative samples. For detailed instructions on how to create and submit a HiCAMS sample, refer to the *Sample Details* chapter of this manual. If the test that was performed does not require a sample to be forwarded to an M&T lab for testing (i.e., conventional density and nuclear density tests that are performed in the field), skip this section and begin with the "Enter IA Correlation Details" section of this chapter.

Concrete Correlations

The Concrete Technician periodically visits the project site to perform air and "slump" tests, and prepare concrete cylinders for the purpose of comparative testing at intervals indicated by the IAS testing frequency in the Minimum Sampling Guide. Concrete correlations are done by comparing Acceptance test results with IA test results.

Step 1: At the project site, a concrete cylinder is prepared and a sample card is filled out.

When completing the sample card, ALWAYS use the same station number for the IA Comparative sample as the Acceptance sample. Although the IA sample may have been taken a few feet from the Acceptance sample, these station numbers must match in order for HiCAMS to link and correlate the two samples.

Step 2: The Concrete Technician, or appropriate data entry staff, creates a HiCAMS sample record for the cylinder using information from the sample card.

Note: *The IA sample must be created in HiCAMS with a test category of "IA – Comparative".*

Step 3: The IA sample is submitted to the Physical Lab for compression testing.

Step 4: Once compression testing is complete and test results are recorded on a test format, the HiCAMS sample is authorized by the Physical Lab.

Step 5: Upon authorization of the IA Comparative sample, the HiCAMS application searches for a related acceptance sample based on contract number, material description, producer/supplier, station number, and sampled date. Once found, a correlation record will be created and all ratings will be automatically calculated. A notification will be sent to the Concrete Technician that the IA Correlation is ready for verification.

Step 6: If no matching acceptance sample can be found, the IA Comparative sample will be added to a list of items pending correlation. Failure to find a matching Acceptance sample can be caused by one of three reasons:

- The matching Acceptance sample was not yet entered into HiCAMS at the time the IA-Comparative sample was authorized
- The matching Acceptance sample was not yet authorized and available for correlation at the time the IA-Comparative sample was authorized.
- A data entry error exists on either the Acceptance or IA-Comparative sample and an exact match cannot be made.

Each evening, HiCAMS will review the IA-Comparative samples that could not be linked to an Acceptance sample at the time of authorization, and attempt to find a match. If a link is established overnight, a notification will be sent to the Concrete Technician that the IA Correlation is ready for verification.

IA-Comparative samples that cannot be automatically correlated at the time of authorization can also be manually correlated once the Acceptance sample is authorized. See the "View IA Records Pending Correlation" section of this chapter for detailed instructions on manually correlating IA Comparative samples.

For instructions on how to verify a concrete correlation once a link has been established, see the "View IA Records Pending Verification & Completion" section of this chapter.

IA ABC Gradation & Stabilizer Correlations

The IA Inspector shall visit the project and obtain aggregate samples for the purpose of comparative testing at intervals indicated by the IAS testing frequency in the Minimum Sampling Guide. Aggregate correlations will be done by comparing Roadway Assurance test results with IA test results.

Step 1: At the project site, an aggregate sample is obtained and a sample card is filled out.

Note: *When completing the sample card, ALWAYS use the same station number for the IA Comparative sample as the Acceptance sample. Although the IA sample may have been taken a few feet from the Acceptance sample, these station numbers must match in order for HiCAMS to link and correlate the two samples.*

Step 2: The IA Inspector shall create a HiCAMS sample record using information from the sample card.

Note: *The IA sample must be created in HiCAMS with a test category of "IA – Comparative"*

Step 3: The IA sample is submitted to the Soils Lab for gradation and / or liquid limit testing.

Step 4: Once testing is completed and the test results are recorded on a test format, the Soils Lab authorizes the HiCAMS sample.

Step 5: Upon authorization of the IA Comparative sample, the HiCAMS application will search for a related Roadway Assurance sample based on contract number, material description, producer/supplier, station number, and sampled date. Once found, a correlation record will be created and all ratings will be automatically calculated. A notification will be sent to the IA Inspector that the IA Correlation is ready for verification.

Step 6: If no matching acceptance sample can be found, the IA Comparative sample will be added to a list of items pending correlation. Failure to find a matching Acceptance sample can be caused by one of two reasons:

- The matching Acceptance sample was not authorized and available for correlation at the time the IA-Comparative sample was authorized.
- A data entry error exists on either the Acceptance or IA-Comparative sample and an exact match cannot be made.

Each evening, HiCAMS will review the IA-Comparative samples that could not be linked to an Acceptance sample at the time of authorization, and attempt to find a match. If a link is established overnight, a notification will be sent to the Concrete Technician that the IA Correlation is ready for verification.

IA-Comparative samples that cannot be automatically correlated at the time of authorization can also be manually correlated once the Acceptance sample is authorized. See the "View IA Records Pending Correlation" section of this chapter for detailed instructions on manually correlating IA Comparative samples.

For instructions on how to verify an aggregate correlation, see the "View IA Records Pending Verification & Completion" section of this chapter.

IA Asphalt Extraction Correlations

The IA Inspector shall visit each divisional QA Lab on a weekly basis and obtain asphalt extraction samples for the purpose of comparative testing at intervals indicated by the IAS testing frequency in the Minimum Sampling Guide. Asphalt Extraction correlations will be done by comparing QA test results with IA test results.

Step 1: At the QA Lab, an asphalt extraction sample and its QA test results are obtained for the purpose of IA comparative testing.

Step 2: The IA Inspector creates an IA comparative sample in HiCAMS using information on the sample card. The QA test results obtained at the QA Lab are held for data entry later in the comparative process.

Note: *The IA comparative sample must be created using the HiCAMS test category "IA – Comparative"*

Step 3: The IA sample is submitted to the Asphalt Lab for gradation and asphalt content testing.

Step 4: Once the IA Comparative sample has been authorized by the Asphalt Lab, the HiCAMS application creates a new correlation record and the IA Inspector is notified that the correlation is ready for QA data input and correlation verification.

For instructions on how to verify an asphalt extraction correlation, see the "View IA Records Pending Verification & Completion" section of this chapter.